

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)
)
Replacement of Part 90 by Part 88)
to Revise the Private Land Mobile)
Radio Services and Modify the)
Policies Governing Them)

PR Docket 92-235

DOCKET FILE COPY ORIGINAL

To: The Commission

PETITION FOR RECONSIDERATION AND/OR CLARIFICATION

SpaceLabs Medical, Inc. ("SpaceLabs") hereby petitions for reconsideration and/or clarification of the new Part 90 rules adopted by the Commission in the above-captioned proceeding.^{1/} Specifically, SpaceLabs requests that the Commission take steps to ensure the availability of low power channels for use by biomedical telemetry devices on a primary basis; currently such services operate on a secondary basis under Part 90, on certain of the offset channels in the 450-470 MHZ band. Such action is requested because, although the Commission in the Report and Order increased the number of low power offset channels in the 450-470 MHZ band, and provided limited mechanisms to allow current low power operators to achieve primary status, it did so in a way that fails to accommodate the unique

^{1/} Report and Order and Further Notice of Proposed Rulemaking, PR Docket No. 92-235, FCC 95-255 (June 23, 1995) ("Report and Order").

bandwidth and power requirements of biomedical telemetry systems.^{2/}

I. SPACELABS' INTEREST IN THE PROCEEDING.

As the Commission is aware, SpaceLabs filed extensive comments and reply comments in the proceedings leading up to the adoption of the Report and Order. There, SpaceLabs detailed the substantial adverse consequences for wireless electrocardiogram ("ECG") monitoring systems that would have resulted from the adoption of certain of the then-pending "refarming" proposals. While many of those proposals were not embraced in the Report and Order, the regulatory changes that the Commission did adopt may have, in practical terms, an equally adverse impact.

II. IMPACT OF THE NEW RULES.

In its comments and reply comments in this docket, SpaceLabs provided a detailed review of: (1) the essential nature and purpose of biomedical telemetry;^{3/} (2) the strict

^{2/} The Commission recognized the unique circumstances surrounding biomedical telemetry in its recent freeze on the filing of license applications requesting power in excess of that now permitted on the offset channels. The freeze will remain in effect until issues are resolved relative to the consolidation of radio services and/or the designation of dedicated channels in the 450-470 MHz band for low power use. Public Notice, PR Docket No. 92-235, DA 95-1771 (August 11, 1995).

^{3/} See SpaceLabs Comments at 3 (filed May 28, 1993).

operational requirements of these systems;^{4/} and (3) the reasonably anticipated future needs of the healthcare industry for expanded use of such systems.^{5/}

In general, SpaceLabs demonstrated that wireless ECG monitoring systems have come to be considered as essential equipment in most large hospitals, providing both the hospital and the patient with vastly increased flexibility. Except for circumstances in which the patient is nonambulatory, it is easier, and far more cost-effective, to employ portable units. More importantly, the portable units permit ambulatory patients a great deal of freedom of movement, an aspect of the recovery process that has become increasingly important in the judgment of the medical profession.

While the new rules adopted in the Report and Order increase the number of low power offset channels, which in the abstract might appear beneficial, the new rules create these new channels in a way that fails to accommodate the needs of low power biomedical telemetry users. In addition, although the Report and Order provides mechanisms for permitting current low power operations to achieve primary status, these mechanisms fall far short of

^{4/} Id. at 5.

^{5/} Id. at 8; SpaceLabs Reply Comments at 3 (filed July 30, 1993).

guaranteeing that biomedical telemetry users will have access to sufficient usable spectrum to ensure viable operation.

A. Many of the New Offset Channels Created in the Report and Order Will be Unusable for Biomedical Telemetry Purposes.

Because of the biomedical telemetry channel bandwidth requirements previously documented for the Commission, the new 6.25 kHz channelization plan will require telemetry systems operating on the new offset channels (centered 3.125 kHz from the center frequencies of the 6.25 kHz channels) to stack contiguous offset channels to obtain sufficiently wide channels. As a result of this stacking, rather than creating more offset channels for biomedical telemetry users, the new rules may actually decrease the number of channels that can be employed, because telemetry users will need to take into account several times the number of high power users per kHz of channel bandwidth.

Specifically, telemetry users will, for the first time, need to take into account the fact that high power users may be operating at center frequencies within their telemetry channels. Furthermore, users will need to take into account interference from a greater number of high power users for each of their telemetry channels. The frequency of random interference will increase significantly

with this increase in the number of co-channels and adjacent channels per telemetry "channel."

In the absence of a substantial restructuring of the new channelization plan, it may be essential for telemetry operators to be able to obtain primary status for their systems. However, as discussed below, the new regulations do not facilitate such action by low power users.

B. The Mechanisms in the Report and Order for Permitting Biomedical Telemetry Operation on a Primary Basis are Insufficient to Guarantee Viable Operation.

1. Biomedical Telemetry Operators are Unable to Rely on the Report and Order Provision Authorizing Designated Low Power Channels.

While the Report and Order authorizes frequency coordinators to designate 6.25 kHz channels for low power use,^{6/} it does not guarantee biomedical telemetry users access to a sufficient number of such channels. First, low power, for purposes of this authorization, is specified as 2 watts or less. Biomedical telemetry users operate at much lower powers -- 5 milliwatts or less. This leaves open the possibility that biomedical telemetry users would still have to compete with higher power users for any low-power designated channels. Furthermore, there is no guarantee that low power channels will be designated; discretion is

^{6/} Report and Order at 35.

left to frequency coordinators under the new rules. Finally, if the Commission implements its proposal to introduce competition into the frequency coordination function,^{7/} it is not clear how the task of designating low power channels could be delegated to multiple frequency coordinators. Thus, the authorization granted in the Report and Order to frequency coordinators to designate channels for low power use on a primary basis fails to ensure adequate accommodation of biomedical telemetry users.

2. Biomedical Telemetry Operators Cannot Satisfy the Report and Order's Conditions for Achieving Primary Status.

The Report and Order permits low power offset channels users who choose to remain on their current frequencies to achieve primary status by raising their output power and providing a justification for that increase.^{8/} This option, as written, cannot be exercised by biomedical telemetry users, because an increase in output power is neither feasible nor warranted.

As noted in SpaceLabs' Comments, an increase in power sufficient to achieve primary status would require larger, heavier, and more costly batteries (or result in

^{7/} Id. at 30.

^{8/} Id. at 36.

substantially shorter battery life).^{2/} In addition, it could pose a threat to patient health and to the operation of other electronic equipment frequently encountered in the hospital environment. Furthermore, increased power would decrease frequency reuse capabilities, both inside and outside the hospital. Biomedical telemetry signals would no longer be confined to the extent of the hospital's walls, which would lead to a severely inefficient use of spectrum.

III. THE COMMISSION SHOULD CLARIFY OR AMEND THE RULES TO GUARANTEE A SUFFICIENT ALLOCATION OF FREQUENCY-COORDINATED SPECTRUM FOR USE BY BIOMEDICAL TELEMETRY OPERATIONS ON A PRIMARY BASIS.

In view of the above considerations, the simplest and most efficient long-term solution for accommodating biomedical telemetry users is to allocate separate blocks of contiguous channels for primary use by biomedical telemetry operators. Only such an allocation will reconcile the rigid channel bandwidth and spectrum capacity requirements of such operations with the new 6.25 kHz channelization plan.

In view of the ongoing efforts to consolidate the Private Land Mobile Radio Services,^{10/} making adequate provision for biomedical telemetry may best be accomplished by specifying that, once the consolidation plans are finalized, frequency coordinators will be required to

^{2/} See, e.g., SpaceLabs Comments at 3 n.1, 8 n.4.

^{10/} Report and Order at 30.

designate sufficient low-power channels for use by biomedical telemetry operators on a primary basis. Furthermore, particularly until designation of such spectrum is finalized, existing biomedical telemetry operations must be protected from interference from new operations using center frequencies within the existing telemetry system's channel.

CONCLUSION

Based on the foregoing, SpaceLabs requests that the Commission provide the regulatory relief needed to ensure the long-term viability of wireless biomedical telemetry.

Respectfully submitted,

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